# HiFill® PP GB50

### Polypropylene

### **Techmer Engineered Solutions**

### Message:

HiFill® PP GB50 is a Polypropylene product filled with 50% glass bead. It can be processed by injection molding and is available in North America.

Forms         Pellets           Processing Method         Injection Molding           Physical         Nominal Value         Unit         Test Method           Specific Gravity         1.33         g/cm³         ASTM D792           Molding Shrinkage - Flow (3.18 mm)         1.4         %         ASTM D955           Water Absorption (24 hr)         0.030         %         ASTM D570           Hardness         Nominal Value         Unit         Test Method           Rockwell Hardness (R-Scale)         99         — ASTM D785           Mechanical         Nominal Value         Unit         Test Method           Tensile Strength (Break)         1.8.6         MPa         ASTM D638           Tensile Longation (Break)         8.0         %         ASTM D638           Flexural Modulus         2280         MPa         ASTM D790           Impact         Nominal Value         Unit         Test Method           Notched Izod Impact (23°C, 3.18 mm)         32         J/m         ASTM D556           Thermal         Nominal Value         Unit         Test Method           Deflection Temperature Under Load         121         *C           0.45 MPa, Unannealed         121         *C	Filler / Reinforcement	Glass Bead,50% Filler by Weight		
Processing Method         Injection Molding           Physical         Nominal Value         Unit         Test Method           Specific Gravity         1.33         g/cm³         ASTM D792           Molding Shrinkage - Flow (3.18 mm)         1.4         %         ASTM D795           Water Absorption (24 hr)         0.030         %         ASTM D570           Hardness         Nominal Value         Unit         Test Method           Rockwell Hardness (R-Scale)         99         —         ASTM D785           Mechanical         Nominal Value         Unit         Test Method           Tensile Strength (Break)         18.6         MPa         ASTM D638           Flexural Modulus         2280         MPa         ASTM D790           Flexural Strength         29.6         MPa         ASTM D790           Impact         Nominal Value         Unit         Test Method           Notchel Izod Impact (23°C, 3.18 mm)         32         J/m         ASTM D790           Thermal         Nominal Value         Unit         Test Method           Deflection Temperature Under Load         79.4         *C           0.45 MPa, Unannealed         79.4         *C           Melting Temperature         170	Appearance	Colors Available		
Physical         Nominal Value         Unit         Test Method           Specific Gravity         1.33         g/cm³         ASTM D792           Molding Shrinkage - Flow (3.18 mm)         1.4         %         ASTM D955           Water Absorption (24 hr)         0.030         %         ASTM D70           Hardness         Nominal Value         Unit         Test Method           Rockwell Hardness (R-Scale)         99         ASTM D785           Mechanical         Nominal Value         Unit         Test Method           Tensile Strength (Break)         18.6         MPa         ASTM D638           Tensile Elongation (Break)         8.0         %         ASTM D638           Flexural Modulus         2280         MPa         ASTM D790           Impact         Nominal Value         Unit         Test Method           Notched Izod Impact (23°C, 3.18 mm)         32         J/m         ASTM D256           Thermal         Nominal Value         Unit         Test Method           Deflection Temperature Under Load         °C         ASTM D648           0.45 MPa, Unannealed         121         °C           1.8 MPa, Unannealed         170         °C           Welting Temperature         170	Forms	Pellets		
Specific Gravity         1.33         g/cm³         ASTM D792           Molding Shrinkage - Flow (3.18 mm)         1.4         %         ASTM D955           Water Absorption (24 hr)         0.030         %         ASTM D570           Hardness         Nominal Value         Unit         Test Method           Rockwell Hardness (R-Scale)         99         ASTM D785           Mechanical         Nominal Value         Unit         Test Method           Tensile Strength (Break)         18.6         MPa         ASTM D638           Tensile Elongation (Break)         8.0         %         ASTM D638           Flexural Modulus         2280         MPa         ASTM D790           Impact         Nominal Value         Unit         Test Method           Notched Izod Impact (23°C, 3.18 mm)         32         J/m         ASTM D56           Thermal         Nominal Value         Unit         Test Method           Deflection Temperature Under Load         121         °C           0.45 MPa, Unannealed         121         °C           Melting Temperature         170         °C           CLTE - Flow         6.1E-5         cm/cm/°C         ASTM D696           Electrical         Nominal Value <td< td=""><td>Processing Method</td><td>Injection Molding</td><td></td><td></td></td<>	Processing Method	Injection Molding		
Molding Shrinkage - Flow (3.18 mm)         1.4         %         ASTM D955           Water Absorption (24 hr)         0.030         %         ASTM D570           Hardness         Nominal Value         Unit         Test Method           Rockwell Hardness (R-Scale)         99         ASTM D785           Mechanical         Nominal Value         Unit         Test Method           Tensile Strength (Break)         18.6         MPa         ASTM D638           Tensile Elongation (Break)         8.0         %         ASTM D638           Flexural Modulus         2280         MPa         ASTM D790           Impact         Nominal Value         Unit         Test Method           Notched Izod Impact (23°C, 3.18 mm)         32         J/m         ASTM D256           Thermal         Nominal Value         Unit         Test Method           Deflection Temperature Under Load         121         °C         ***           0.45 MPa, Unannealed         121         °C         ***           1.8 MPa, Unannealed         79.4         °C         **           Melting Temperature         170         °C         **           CLTE - Flow         6.1E-5         cm/cm/°C         ASTM D696           El	Physical	Nominal Value	Unit	Test Method
Water Absorption (24 hr)         0.030         %         ASTM D570           Hardness         Nominal Value         Unit         Test Method           Rockwell Hardness (R-Scale)         99         ASTM D785           Mechanical         Nominal Value         Unit         Test Method           Tensile Strength (Break)         18.6         MPa         ASTM D638           Flexural Modulus         2280         MPa         ASTM D790           Flexural Strength         29.6         MPa         ASTM D790           Impact         Nominal Value         Unit         Test Method           Notched Izod Impact (23*C, 3.18 mm)         32         J/m         ASTM D256           Thermal         Nominal Value         Unit         Test Method           Deflection Temperature Under Load         *C         ASTM D648           0.45 MPa, Unannealed         121         *C           Melting Temperature         170         *C           CLTE - Flow         6.1E-5         cm/cm/*C         ASTM D696           Electrical         Nominal Value         Unit         Test Method           Volume Resistivity         1.0E+16         ohms: cm         ASTM D697	Specific Gravity	1.33	g/cm³	ASTM D792
Hardness         Nominal Value         Unit         Test Method           Rockwell Hardness (R-Scale)         99         ASTM D785           Mechanical         Nominal Value         Unit         Test Method           Tensile Strength (Break)         18.6         MPa         ASTM D638           Tensile Elongation (Break)         8.0         %         ASTM D638           Flexural Modulus         2280         MPa         ASTM D790           Impact         Nominal Value         Unit         Test Method           Notched Izod Impact (23°C, 3.18 mm)         32         J/m         ASTM D256           Thermal         Nominal Value         Unit         Test Method           Deflection Temperature Under Load         "C         ASTM D648           0.45 MPa, Unannealed         121         "C           Melting Temperature         170         "C           CLTE - Flow         6.1E-5         cm/cm/"C         ASTM D696           Electrical         Nominal Value         Unit         Test Method	Molding Shrinkage - Flow (3.18 mm)	1.4	%	ASTM D955
Rockwell Hardness (R-Scale)         99         ASTM D785           Mechanical         Nominal Value         Unit         Test Method           Tensile Strength (Break)         18.6         MPa         ASTM D638           Tensile Elongation (Break)         8.0         %         ASTM D638           Flexural Modulus         2280         MPa         ASTM D790           Impact         Nominal Value         Unit         Test Method           Notched Izod Impact (23°C, 3.18 mm)         32         J/m         ASTM D256           Thermal         Nominal Value         Unit         Test Method           Deflection Temperature Under Load         121         °C         ASTM D648           0.45 MPa, Unannealed         121         °C         ASTM D648           Melting Temperature         170         °C         ASTM D696           Electrical         Nominal Value         Unit         Test Method           Volume Resistivity         1.0E+16         ohms· cm         ASTM D595	Water Absorption (24 hr)	0.030	%	ASTM D570
Mechanical Nominal Value Unit Test Method Tensile Strength (Break) 18.6 MPa ASTM D638 Tensile Elongation (Break) 8.0 % ASTM D638 Flexural Modulus 2280 MPa ASTM D790 Flexural Strength 29.6 MPa ASTM D790 Impact Nominal Value Unit Test Method Notched Izod Impact (23°C, 3.18 mm) 32 J/m ASTM D256 Thermal Nominal Value Unit Test Method Deflection Temperature Under Load 121 °C 1.8 MPa, Unannealed 79.4 °C Melting Temperature 170 °C CLTE - Flow 6.1E-5 cm/cm/°C ASTM D696 Electrical Nominal Value Unit Test Method Volume Resistivity 1.0E+16 ohms·cm ASTM D257	Hardness	Nominal Value	Unit	Test Method
Tensile Strength (Break)         18.6         MPa         ASTM D638           Tensile Elongation (Break)         8.0         %         ASTM D638           Flexural Modulus         2280         MPa         ASTM D790           Flexural Strength         29.6         MPa         ASTM D790           Impact         Nominal Value         Unit         Test Method           Notched Izod Impact (23°C, 3.18 mm)         32         J/m         ASTM D256           Thermal         Nominal Value         Unit         Test Method           Deflection Temperature Under Load         *C         ASTM D648           0.45 MPa, Unannealed         121         *C           1.8 MPa, Unannealed         79.4         *C           Melting Temperature         170         *C           CLTE - Flow         6.1E-5         cm/cm/**C         ASTM D696           Electrical         Nominal Value         Unit         Test Method           Volume Resistivity         1.0E+16         ohms·cm         ASTM D257	Rockwell Hardness (R-Scale)	99		ASTM D785
Tensile Elongation (Break)         8.0         %         ASTM D638           Flexural Modulus         2280         MPa         ASTM D790           Flexural Strength         29.6         MPa         ASTM D790           Impact         Nominal Value         Unit         Test Method           Notched Izod Impact (23°C, 3.18 mm)         32         J/m         ASTM D256           Thermal         Nominal Value         Unit         Test Method           Deflection Temperature Under Load         *C         ASTM D648           0.45 MPa, Unannealed         121         *C           1.8 MPa, Unannealed         79.4         *C           Melting Temperature         170         *C           CLTE - Flow         6.1E-5         cm/cm/**C         ASTM D696           Electrical         Nominal Value         Unit         Test Method           Volume Resistivity         1.0E+16         ohms·cm         ASTM D257	Mechanical	Nominal Value	Unit	Test Method
Flexural Modulus 2280 MPa ASTM D790 Flexural Strength 29.6 MPa ASTM D790 Impact Nominal Value Unit Test Method Notched Izod Impact (23°C, 3.18 mm) 32 J/m ASTM D256 Thermal Nominal Value Unit Test Method Deflection Temperature Under Load C45 MPa, Unannealed 121 °C 1.8 MPa, Unannealed 79.4 °C Melting Temperature 170 °C CLTE - Flow 6.1E-5 cm/cm/°C ASTM D696 Electrical Nominal Value Unit Test Method Volume Resistivity 1.0E+16 ohms·cm ASTM D257	Tensile Strength (Break)	18.6	MPa	ASTM D638
Flexural Strength 29.6 MPa ASTM D790 Impact Nominal Value Unit Test Method Notched Izod Impact (23°C, 3.18 mm) 32 J/m ASTM D256 Thermal Nominal Value Unit Test Method Deflection Temperature Under Load 'C' 1.8 MPa, Unannealed 121 °C 1.8 MPa, Unannealed 79.4 °C Melting Temperature 170 °C CLTE - Flow 6.1E-5 cm/cm°C ASTM D696 Electrical Nominal Value Unit Test Method Volume Resistivity 1.0E+16 ohms · cm ASTM D257	Tensile Elongation (Break)	8.0	%	ASTM D638
Impact Nominal Value Unit Test Method  Notched Izod Impact (23°C, 3.18 mm) 32	Flexural Modulus	2280	MPa	ASTM D790
Notched Izod Impact (23°C, 3.18 mm)  32  J/m  ASTM D256  Thermal  Nominal Value  Unit  Test Method  ASTM D648  0.45 MPa, Unannealed  121  °C  1.8 MPa, Unannealed  79.4  °C  Melting Temperature  170  °C  CLTE - Flow  6.1E-5  Cm/cm/°C  ASTM D696  Electrical  Nominal Value  Unit  Test Method  ASTM D696  ASTM D696  ASTM D696  ASTM D696  ASTM D696  ASTM D696	Flexural Strength	29.6	MPa	ASTM D790
Thermal Nominal Value Unit Test Method  Deflection Temperature Under Load CASTM D648  0.45 MPa, Unannealed 121 °C  1.8 MPa, Unannealed 79.4 °C  Melting Temperature 170 °C  CLTE - Flow 6.1E-5 cm/cm/°C ASTM D696  Electrical Nominal Value Unit Test Method  Volume Resistivity 1.0E+16 ohms·cm ASTM D257	Impact	Nominal Value	Unit	Test Method
Deflection Temperature Under Load       ASTM D648         0.45 MPa, Unannealed       121       °C         1.8 MPa, Unannealed       79.4       °C         Melting Temperature       170       °C         CLTE - Flow       6.1E-5       cm/cm/°C       ASTM D696         Electrical       Nominal Value       Unit       Test Method         Volume Resistivity       1.0E+16       ohms·cm       ASTM D257	Notched Izod Impact (23°C, 3.18 mm)	32	J/m	ASTM D256
0.45 MPa, Unannealed       121       °C         1.8 MPa, Unannealed       79.4       °C         Melting Temperature       170       °C         CLTE - Flow       6.1E-5       cm/cm/°C       ASTM D696         Electrical       Nominal Value       Unit       Test Method         Volume Resistivity       1.0E+16       ohms·cm       ASTM D257	Thermal	Nominal Value	Unit	Test Method
1.8 MPa, Unannealed79.4°CMelting Temperature170°CCLTE - Flow6.1E-5cm/cm/°CASTM D696ElectricalNominal ValueUnitTest MethodVolume Resistivity1.0E+16ohms·cmASTM D257	Deflection Temperature Under Load			ASTM D648
Melting Temperature 170 °C  CLTE - Flow 6.1E-5 cm/cm/°C ASTM D696  Electrical Nominal Value Unit Test Method  Volume Resistivity 1.0E+16 ohms·cm ASTM D257	0.45 MPa, Unannealed	121	°C	
CLTE - Flow 6.1E-5 cm/cm/°C ASTM D696  Electrical Nominal Value Unit Test Method  Volume Resistivity 1.0E+16 ohms·cm ASTM D257	1.8 MPa, Unannealed	79.4	°C	
Electrical Nominal Value Unit Test Method  Volume Resistivity 1.0E+16 ohms·cm ASTM D257	Melting Temperature	170	°C	
Volume Resistivity 1.0E+16 ohms·cm ASTM D257	CLTE - Flow	6.1E-5	cm/cm/°C	ASTM D696
<u> </u>	Electrical	Nominal Value	Unit	Test Method
Dielectric Strength <sup>1</sup> 20 kV/mm ASTM D149	Volume Resistivity	1.0E+16	ohms·cm	ASTM D257
	Dielectric Strength <sup>1</sup>	20	kV/mm	ASTM D149

1. Method A (Short-Time)

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